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FTO gene associated fatness in relation to body fat distribution and metabolic traits throughout the range of fatness in white menKring SII^{1,2}, Holst C¹, Zimmermann E¹, Jess T¹, Berentzen T¹, Toubro S¹, Hansen T⁴, Astrup A³, Pedersen O⁴, Sørensen TIA¹¹Institute of Preventive Medicine, Copenhagen University Hospitals, Centre for Health and Society, Copenhagen, Denmark.²Center for Pharmacogenomics, the Panum Institute, University of Copenhagen, Denmark³Reduce – Research Clinic of Human Nutrition, Hvidovre University Hospital, Denmark⁴Steno Diabetes Center, Copenhagen, Denmark.⁵Institute of Human Nutrition, Faculty of Life Sciences, University of Copenhagen, Denmark**Background:** We investigated how the common FTO rs9939609 (T/A) and its associated total body fatness are related to abdominal and peripheral fatness and metabolic traits in white men.**Methods:** Obese young white men (n=753, BMI \geq 31.0 kg/m²) at the draft board examinations and a randomly selected group (n=879) were examined in two surveys (mean age 35 and 45, respectively) using logistic regression to assess age-adjusted z-score odds ratios.**Results:** Fat body mass index was associated with the rare AA genotype (OR=1.21, p=4.6*10⁻⁶ and OR=1.21, p=1.0*10⁻³, survey 1 and 2, respectively). Increased abdominal fatness was seen for the AA genotype measured as waist circumference (OR=1.21, p=2.2*10⁻⁶ and OR=1.19, p=5.9*10⁻³), sagittal abdominal diameter (OR=1.17, p=1.3*10⁻⁴ and OR=1.18, p=0.011) and intra-abdominal adipose tissue (OR=1.21, p=0.005). Increased peripheral fatness measured as hip circumference (OR=1.19, p=1.3*10⁻⁵ and OR=1.18, p=0.004) and lower body fat mass% (OR=1.26, p=0.002) was also associated with the AA genotype. The AA genotype also associated with decreased Stumvoll insulin sensitivity index (OR=0.93, p=0.02) and with decreased non-fasting plasma HDL-cholesterol (OR=0.57, p=0.037). All significant results for body fat distribution and metabolic traits were explained by a mediating effect of fat mass.**Conclusions:** The association of the A-allele of FTO rs9939609 to global body fatness throughout the range of fatness is confirmed, and this association explains the relation between the gene variant and body fat distribution, decreased insulin sensitivity and decreased HDL-cholesterol. The SNP was not significantly associated with other metabolic traits suggesting that they are not derived from the general accumulation of body fat.**Funding:** Research related to this abstract was funded by Center for Pharmacogenomics, University of Copenhagen, Denmark

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Maternal Overweight and Obesity versus Breastfeeding SuccessLucas, C¹, Teixeira, D¹, Silvestre, V¹ Almeida de Souza, J. and Ferreira, E.¹Instituto Politécnico de Bragança – Escola Superior de Saúde, Bragança, Portugal**Introduction and Aims:** Maternal Obesity has been associated with a poor lactation in animal models but these results are inconclusive on investigations made with Human. Because the prevalence of overweight and obesity is increasing dramatically among women in reproductive age mainly, in Portugal investigations that relate to the maternal obesity breastfeeding are necessary, which is the main purpose of this study warning of the importance of a pregnancy planned and this point to the importance of controlling weight.**Methods:** In the sample were included all primiparous mothers of singletons (n = 680) aged between 19 and 40 years, whose son was born between 24 May and 31 October 2007 in the Hospital de São João, Centro Hospital of Vila Nova de Gaia and Unidade Local de Saúde of Matosinhos, SA, which tried to breastfeed after birth. Body mass index (BMI) before pregnancy and gestacional weight gain were categorized according to guideline from the Institute of Medicine.**Results:** Regardless of gestacional weight gain, overweight/obese women ($\alpha=0.029$) were less likely to initiate breastfeeding (defined as the child to be breastfed exclusively with breast milk until at least the first two weeks post-partum) than women with a normal BMI before pregnancy. Because the follow-up (telephone interviews will be made after two weeks, two months and six months post-partum) isn't over yet, results can not be accurate described about the duration of breastfeeding, however it is expected that both obesity before pregnancy and inadequate gestacional weight gain have a negative effect on breastfeeding practice.

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E-KINDEX, a novel dietary index that is associated with obesity status in childrenLazarou, C¹ Panagiotakos D.B¹, Matalas, A-L¹.¹Harokopio University, Department of Nutrition and Dietetics, Athens, Greece**Background:** There are not any published dietary indices that evaluate the synergistic effect of various dietary components, beliefs and practices on obesity development among children.**Objective:** We sought to develop a dietary index, which a-priori incorporates several characteristics and practices that have been implicated in the development of obesity.**Methods:** Data from a nationwide cross sectional data, among 1140 children (10.7 \pm 0.9 years). The proposed E-KINDEX integrates into a single score three other indexes: a food groups intake index, an index related to eating beliefs and behaviours and an index that evaluate dietary practices (including meal patterns). The aforementioned indices are composed of 13, 8, 9 components, respectively. The total E-KINDEX score ranges from (worst) to 87 (best).We applied the E-KINDEX score in a sub-sample of 634 children of our study (11.7 \pm 0.9 years), for whom height, weight and waist circumference (WC) were measured. Obesity status was defined according to age-sex specific criteria by IOTF.**Results:** The mean E-KINDEX score was 58.2 \pm 7.8. The E-KINDEX score was associated with 83% less likelihood of being obese or overweight (OR=0.17, 95%CI 0.08-0.37), and 81% less likelihood of having WC \geq 77cm (OR=0.19, 95%CI 0.08-0.44), after adjusting for age, sex and physical activity. Cut-off point analysis revealed that the optimal value of the score, which discriminates children with normal weight from overweight/obese, is 60.5 \pm 8.7. The sensitivity of this threshold was 74%, while the specificity was found to be 54%.**Conclusion:** The proposed E-KINDEX score is associated with obesity status in children and may be a useful tool for public health for the prevention and management of childhood obesity.**Acknowledgements:** This project was supported by a Cyprus Research Promotion Foundation research grant (AKGEN/0506/05). The study was partially subsidized by 'Charalambides' dairies and by Cyprus Dietetic Association. We would like to sincerely thank the participating children and their parents. Finally, we would like to thank the Cyprus Ministry of Education & Culture (Department of Primary Education) and all the teachers who readily consented to carry out the study during school hours.

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Obesity treatment for children and youth in Germany – report of an observational studyMann, R¹, Bullinger, M², Goldapp, C³, Holl, R⁴, Ravens-Sieberer, U⁵, Reinehr, T⁶, van Egmond-Fröhlich, A⁷, Westenhöfer, J⁸¹Federal Centre for Health Education, Cologne, Germany; ²University Medical Center Hamburg-Eppendorf, Germany; ³Federal Centre for Health Education, Cologne, Germany; ⁴Ulm University, Ulm, Germany; ⁵Robert-Koch-Institute, Berlin, Germany; ⁶Child and youth hospital Datteln, Datteln, Germany⁷Child rehabilitation clinic "Am Nicolausholz", Bad Kösen, Germany; ⁸Hamburg University of Applied Sciences, Hamburg, Germany**Background:** The prevalence of childhood obesity in Germany is high (and still increasing). Therefore a great number of different treatment programmes have been developed in recent years, focusing on different aspects of therapy as nutrition, activity or psychosocial issues. But only few interventions have been evaluated regarding effectiveness and long-term results.**Objective:** Based on this starting point the Federal Centre for Health Education (FCHE) decided to initiate an observational study to give an overview of the effectiveness of obesity treatment in Germany. Two main issues were:

What effects did the interventions have on the physical and mental conditions of the patients?

What key factors (e. g. therapy concept and intensity) influenced the therapy results?

Method: The nationwide observational study started in 2006 as a longitudinal trial. The interventions were grouped in six clusters (1. inpatient treatment 2. day-cases treatment 3. outpatient treatment with focus on a) nutrition b) activity c) psychosocial issues or d) multi-disciplinary approach) Main outcome measures were BMI-SDS, comorbidity (blood pressure, lipid profile), quality of life and behaviour modification. Medical and psychological data were collected before and after the intervention, interval depending on the length of treatment. Follow-up data is collected one year after the end of intervention.**Participants:** 1976 children and youth aged from 8-16 years (mean 12.4 years) with a BMI above the 90th percentile.**Results:** First results show a significant reduction of the degree of obesity in all intervention clusters.

The mental condition showed a significant improvement after intervention, especially with inpatient-programmes.